Dear Perspective Bidder,

Please see Attachments for Request for Quotation # 160235 and Specifications for Monitor/Defibrillator - City of Oak Ridge, TN.

Sealed Bid Date – October 23, 2018 at 2:00 p.m., Local Time

SPECIAL NOTICE TO BIDDERS

1. State, local and use taxes are not applicable.

2. If quoting an Equal or Substitute, provide complete product description and specifications, including manufacturer, model number, etc. and provide necessary back-up literature if applicable.

3. YOUR QUOTATION MUST INCLUDE THE FOLLOWING (see top left corner page 1):

- **Vendor Name**
- **Payment Terms**
- **F.O.B.**
- **Delivery date (delivery date may be a factor in the award process)**
- **Quote delivered price F.O.B. Oak Ridge or notate ESTIMATED freight charges**
- **Authorized signature**

4. Envelope must be sealed, show request number and bid date on front of the envelope and addressed to:

By Regular Mail:

Attn: Lyn Majeski
Finance Department
City of Oak Ridge
P.O. Box 1
Oak Ridge, TN 37831-0001

In Person or By Overnight Delivery:

Attn: Lyn Majeski
Finance Department
City of Oak Ridge
100 Woodbury Lane
Oak Ridge, TN 37830

5. The City of Oak Ridge reserves the right to reject all or any part of any quotation submitted.

6. Your bid must be in our possession no later than: 2:00 P.M. 10/23/18

7. All questions regarding this requisition must be emailed to Lyn Majeski lmajeski@oakridgetn.gov by 10:00 a.m. local time, Friday, October 19, 2018.

City of Oak Ridge, Tennessee
* * * * REQUEST FOR QUOTATION * * * *

Page - 1
Date - 10/17/18
Order No. - 160235-000 OR
Brn/Plt - 923

Vendor Name:_____
Payment Terms:_____
F.O.B.:_____
Delivery Date:_____
Ship Via:_____
Signature:_____ _____

SHIP TO City of Oak Ridge - Materials Management
100 Woodbury Lane / P.O. Box 1
Oak Ridge, TN 37830
(865) 425-1819 FAX (865) 482-8475
Lyn Majeski lmajeski@oakridgetn.gov

Ordered - 10/17/18
Requested - 10/23/18
Delivery - Deliveries are accepted 8 a.m. TO 3 p.m.

Description / Supplier Item		UM	Unit Cost		Extension	Req. Dt
MONITOR/DEFIBRILLATOR PER ATTACHED SPECIFICATIONS	1.	EA		EA		10/17/18

Total Order

Monitor/Defibrillator Bid Specifications

Weight:

1. Unit shall not exceed 10.6 lbs. (4.82 kg) without battery and paper.
2. Unit shall not exceed 11.7 lbs. (5.32 kg) with battery and paper.

Dimensions:

1. Unit must not exceed 10.4 in high x 8.9 in wide x 7.9 in deep (25.4 cm high x 22.6 cm wide x 20.6 cm deep) with handle.
2. Unit must not exceed 8.75 in high x 8.9 in wide x 7.9 in deep (22.2 cm high x 22.6 cm wide x 20.6 cm deep) without handle.
3. Unit must not exceed 615 cubic inches (by volume) without handle.

Operating:

1. Unit must be capable of operating in temperatures between 0 to 50°C.
2. Unit must be capable of operating in humidity between 15 to 95% RH (non-condensing).
3. Unit must be vibration tested to meet EN 1789 for ambulance.
4. Unit must be vibration tested to meet RTCA/DO-160G (multiple helicopter frequencies)
5. Unit must be drop tested to meet IEC 60601-1 and tested at 2 meters
6. Unit must be capable of working at altitudes between -170 meters to 4572 meters (-557 feet to 15,000 feet).

Transport and Storage:

1. Unit must be capable of being stored at temperatures between -30 and 70°C.
2. Unit must be capable of being stored between 15 to 95% RH (non-condensing).

Environmental Protection:

1. Unit must have a minimum IP55 rating for water and solid foreign objects.

Monitor/Display:

1. Unit must have Tri-Mode display.
2. Unit must be able to change display from 'color' to 'black on white' (high contrast display for optimal display in bright sunlight) via the push of a quick access key.
3. Unit must have night vision goggle (NVG) display.
4. Unit must be able to display real-time 2-lead ECG on screen.
5. Unit must be able to display static ECG analysis results and real-time ECG on screen concurrently.
6. Unit must be able to display four (4) waveforms.

7. Unit must be able to display large numeric values independent of ECG or waveforms.
8. Unit must have a high resolution color liquid crystal display (LCD) as a standard feature.
9. Unit must have a screen size that is a minimum of 6.5 inches (16.5cm) diagonally.
10. Unit must have a screen with a sweep speed of 25 mm/sec or 50 mm/sec.
11. Unit must have a screen that provides a minimum viewing time of 4.87 seconds.

CPR Quality Improvement

1. The CPR option shall not require utilization of a separate device or additional cable beyond that required for defibrillation.
2. The unit must provide real-time audio and visual CPR rate, depth, and release feedback with a perfusion performance index.
3. The unit must provide CPR artifact filtering to allow rescuer to see underlying rhythms to minimize pauses in compressions.
4. The unit must be current AHA Guidelines compliant and upgradeable to updated AHA Guidelines as necessary.
5. The unit must provide the option for CPR data to be recorded to internal memory.
6. The unit must provide the ability to review CPR on a software program to provide a complete review of the compressions delivered.
7. The unit must provide a filter that will allow continuous chest compressions to be done for the full duration of the user's CPR protocol.
8. The CPR option on the unit must be able to be used in a moving environment, such as an ambulance.
9. The CPR option must allow the option for anterior-posterior pad placement.
10. When the CPR option is in use, the SpO_2 monitoring functionality must also be available.
11. The CPR feedback must be available with the standard pads.

Monitoring

1. Unit must be capable of patient monitoring through 3-lead, 4-lead, 5-lead and 12-lead ECG cables, multi-function electrodes and pads/paddles.
2. Unit must have impedance pneumography for monitoring respiratory rate via ECG Leads I or II.
3. Unit must have ability to measure respiratory rate via Capnography or impedance pneumography.
4. Unit must be indicated for use on adult, pediatric and neonatal patients.
5. Unit must have a lead selector button located on front panel that allows user to change leads by pushing lead button.
6. Unit must display lead selected on display at all times.
7. Leads must be fully defibrillator protected.
8. Unit must have dedicated circuitry that detects most implanted pacer spikes.
9. Unit must display standard marker of pacer spike on ECG trace.

10. Unit must have the following bandwidths:
    - 3/5/12 Lead Continuous Monitoring: 0.67 – 20 Hz Limited mode, 0.67 – 40 Hz Monitor mode, 0.05 to 40Hz EMS diagnostic.
    - 12 Lead display and snapshot: 0.5 – 40 Hz Filtered Diagnostic mode and 0.5 – 150 Hz Diagnostic mode.
11. Unit must have the following ECG sizes: 0.125, 0.25, 0.5, 1, 2, 4 cm/mV and auto-ranging.
12. Unit must show heart rate on display.
13. Unit must display a heart rate range between 30 – 300 bpm.
14. Unit must contain heart rate alarms that are user selectable.
15. Heart rate alarms must have an on/off indicator displayed on monitor.
16. Heart rate alarms must be capable of providing the user with an auto-generated strip chart recording, visual message and audible tone when activated.
17. In AED Mode, the unit must be able to use any of the following monitoring parameters: $EtCO_2$, SpO_2, SpCO, SpMet, 12-lead ECG and/or NIBP.

Electrodes

1. Unit must utilize Multi-Function Electrodes that allow pacing, defibrillation, cardioversion, CPR feedback and ECG monitoring via one set of disposable pads.
2. Electrodes must be available in sizes for adults and pediatrics.
3. The Multi-Function Electrodes must allow the user to pre-connect the electrodes without compromising shelf life.
4. Electrodes must include an accelerometer to enable CPR feedback and artifact filtering functionality.

Defibrillator

1. Unit must utilize a high current, low energy rectilinear, constant current biphasic waveform.
2. Unit must have the following energy selections available to provider in manual mode operation: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 30, 50, 70, 85, 100, 120, 150 and 200 joules.
3. Unit must have clinical evidence of 95% or better conversion rate at 120J.
4. Unit must have clinical evidence of >95% success on high impedance patients.
5. Unit must meet current AHA specifications for biphasic defibrillation ($\leq$200J low energy, scientific data to support efficacy claims).
6. Unit must allow provider the ability to adjust energy selection controls on device front panel or sternum paddle.
7. Unit must be able to charge to 200 Joules in 7 seconds or less with a new fully charged battery.
8. Unit must display energy selected and delivered on monitor display, strip chart recorder and code summary.

9. Unit must have a defibrillator discharge button that illuminates when device is charged and ready to deliver shock.
10. Unit must have synchronized cardioversion capability with "sync" message displayed on monitor.
11. Unit must have charge controls on both the front panel of unit as well as on apex paddle.
12. Unit must contain a built-in defibrillator tester that tests energy output and continuity of the multifunction cable and paddles, which are documented on strip chart recorder and internal memory.
13. Unit must have a "Multi-function" therapy cable that is field replaceable.
14. Unit must have a single "Multi-function cable" that operates both multi-function electrodes and external paddles.
15. Unit must be indicated for use on adult, pediatric and neonatal patients.

Printer/Recorder

1. Unit must utilize a thermal strip chart recorder.
2. Strip chart recorder must use 80mm paper width thermal recording paper.
3. Strip chart recorder must utilize a 6 second delay.
4. Unit must have user configurable print out modes offering manual or automatic recording options initiated by alarm activation or defibrillator discharge.
5. Strip chart recorder must be able to print four (4) leads simultaneously.

Pacemaker

1. Unit must utilize a constant current 40 ms pace pulse width duration waveform.
2. Unit must have a continuously variable current level.
3. Unit must have a continuously variable pacing rate from 30 - 180 ppm.
4. Pacer parameters must be maintained when switching back to defibrillation or monitor mode.
5. The heart rate alarms must function in the pacing mode.
6. Unit must be configurable for initial setting of pacing rate.
7. Unit must display pacing rate and milliamps on display.
8. The pacer must continue to deliver life-saving therapy in the event an ECG lead falls off.
9. Unit must be able to pace through multi-function or pacing electrodes.

12-Lead ECG

1. The 12-lead ECG must not require any special hardware or proprietary software to view.
2. The 12-lead ECG parameter must reside within a defibrillator weighing less than 11.7 lbs. (5.3 kg).
3. The 12-lead ECG parameter must utilize the Inovise ECG Analysis Program
4. The 12-lead ECG parameter must allow direct transmission of 12-lead ECG to RescueNet 12-Lead via PAN Bluetooth, WiFi or USB Cell modem.

5. The 12-lead ECG must be capable of being acquired without entering deep menus and without the use of a trim knob.
6. The unit must offer a 0.5 – 40 Hz Filtered Diagnostic and a 0.5 – 150 Hz Diagnostic filters.
7. The 12-lead parameter must allow users to easily insert patient name, age and gender using soft keys on the defibrillator
8. The 12-lead parameter must allow users to print the 12-lead analysis interpretation, including measurements and patient name, age and gender on 80 mm paper.
9. The 12-lead patient cable must consist of 4 limb leads and a separate V-lead cable.
10. The 12-lead patient cable must be capable of providing limb lead signals directly to the defibrillator when only the limb leads are attached.
11. Unit must provide the option for integrated Bluetooth for the wireless transmission of 12-lead ECG and vital sign data to LifeNet, Epiphany, MUSE, and RescueNet 12-lead systems.
12. Unit must provide the option for Wi-Fi for the wireless transmission of 12-lead ECG and vital sign data to LifeNet, Epiphany, MUSE, and RescueNet 12-lead systems.
13. Unit must provide the option for USB Cell modem for the wireless transmission of 12-lead ECG and vital sign data to LifeNet, Epiphany, MUSE, and RescueNet 12-lead systems.

Pulse CO-Oximetry

1. The unit must have integrated Oxygen Saturation (SpO_2), Carboxyhemoglobin Saturation (SpCO), Methemoglobin Saturation (SpMet), Oxygen Content (SpOC), Pleth Variability Index (PVI), Perfusion Index (PI) and Heart Rate measurement.
2. The unit must have the ability to automatically display HR, SpO_2, SpCO, SpMet, SpHb, SpOC, PVI and PI values on the screen without user intervention.
3. Alarm settings for SpCO and SpMet must be user configurable.
4. The unit must utilize pulse oximetry technology that has FDA 510(k) clearance for use during patient motion and low perfusion.
5. The unit must include Masimo SET/Rainbow technology.
6. The unit must utilize pulse oximetry sensors that work in bright sunlight.
7. The unit must utilize alarms that are user adjustable in the field.
8. Unit must be indicated for use on adult, pediatric and neonatal patients.

Capnography

1. The defibrillator must be capable of providing continuous $EtCO_2$ and respiratory rate readings as well as a capnogram for on-screen display or print-out.
2. The Microstream sample pump must be rated for 24,000 hours of continuous use.
3. Unit must be indicated for use on adult, pediatric and neonatal patients.

Non-Invasive Blood Pressure

1. Unit must be capable of acquiring a blood pressure measurement on inflation within 15 to 30 seconds.
2. Unit must be capable of synchronizing the oscillation to the R-wave of the ECG.
3. Unit must be capable of using dual lumen tube and/or cuffs
4. Unit must incorporate non-invasive oscillometric technology.
5. Unit must display systolic, diastolic and mean arterial (MAP) pressures.
6. Unit must be capable of taking automatic, stat or manual measurements.
7. Automatic intervals should be user adjustable to 1, 2, 3, 5, 10, 15, 30 and 60 minutes.
8. Unit must be indicated for use on adult, pediatric and neonatal patients.
9. Stat mode must allow for repeated rapid measurements within 5 minutes.
10. Unit must include an artifact indicator which is displayed when excessive artifact is detected.
11. Unit must display a numeric value for cuff inflation status.
12. Unit is capable of displaying and/or printing up to 24 hours of patient vital trend data at one minute intervals.

Temperature

1. Unit must have two temperature channels.
2. Unit must be able to monitor temperature channels while monitoring invasive pressure channels.
3. Unit must be able to monitor rectal, esophageal, skin and/or ambient air temperature.
4. Unit must be able to measure temperatures between 0° to 50°C.
5. Unit must display T1, T2 and /or TΔ
6. Unit must use YSI 400 and/or 700 Series probes.

Communications Outputs

1. Ability to push entire full case file disclosure to an online repository.
2. Built-in wireless communication meeting the following requirements:
    - 802.11 abgn (2.4 or 5.0 Ghz)
    - WPA/WPA2 PSK
    - Broadcast/Hidden SSID
    - Up to 250 Wi-Fi profiles
    - DHCP/Static IP
    - Authentication: EAP-TLS, PEAP/MS-CHAPv2
    - Data transferrable: Full-disclosure & 12-lead
3. Cellular meeting the following requirements:
    - Via an external USB cellular modem
    - Via an Bluetooth supported cellular device
4. Bluetooth meeting the following requirements:
    - Bluetooth connection to a cell phone to support DUN or PAN-NAP profiles.

Battery/Charging Systems

1. Unit must be capable of using rechargeable lithium-ion batteries.
2. A new, fully charged lithium-ion battery operating at room temperature must provide the following capacity: At least 6 hours of continuous monitoring of ECG, SpO_2, CO_2, three Invasive Pressure channels, and two channels of Temperature, with NIBP measurements every 15 minutes and 10 200J shocks.
3. A new, fully charged lithium-ion battery operating at room temperature must provide the following capacity: At least 3.5 hours of pacing with ECG, SpO_2, CO_2, three Invasive Pressure channels, and two channels of Temperature, with NIBP measurements every 15 minutes and pacing at 180 ppm and 140mA.
4. A new, fully charged lithium-ion battery operating at room temperature must be capable of delivering 420 shocks at 200J.
5. The battery must be easy to change.
6. The unit must offer battery option with a recharge time of 4 hours or less with the integral charger.
7. The unit must provide a LOW BATTERY indicator which displays on the monitor.
8. The unit must provide a Battery Management Charger System capable of charging both sealed lead acid and lithium ion batteries.
9. The unit must come with a Battery Management Software program for maintenance and conditioning of the batteries.
10. The unit's AC charger must use a standard grounded cable to operate charging system in AC mode.
11. When plugged in, the AC charger must be able to recharge a depleted lithium ion battery, operate the unit without a battery or batteries, and simultaneously recharge battery and operate unit.
12. The AC charger shall be able to operate at total functionality while drawing power off of recommended vehicle inverters.
13. The Battery Management Charger System must support system must be capable of the simultaneous charging of 4 batteries at one time.
14. The Battery Management Charger System must be capable of the simultaneous testing of up to 4 batteries at one time.
15. The Battery Management Charger System must have an auto test feature that automatically tests, charges, and recalibrates batteries whenever a battery is installed in system.